

## Monday, 11.07.2011

17:00 – 19:00 **Registration and reception** – Hotel dos Templários

## Tuesday, 12.07.2011

8:30 – 9:00 – **Registration** – Polytechnic Institute of Tomar

### Session 1

9:00 – 9:15 – Opening

9:15 – 10:00 – Invited Speaker – Juan M. Peña: *Computations with matrices with special bidiagonal decompositions*

**10.00 – 10.15 – Coffee Break**

### Lecture I

10:15 – 11:45 – Volker Mehrmann: *Nonlinear eigenvalue problems: analysis and numerical solution*

**11.45 – 12.00 – Coffee Break**

### Session 2

12:00 – 12:30 – Oskar Baksalary: *Core inverse of matrices*

12:30 – 13:00 – Nieves Castro-González: *Existence and representation of the group inverse of additive perturbations*

**13.00 – 14.30 – Lunch**

### Session 3A – Spectral properties of matrices

14:30 – 14:55 – Glória Cravo: *On similarity invariants of square matrices*

14:55 – 15:20 – Maja Nedović: *On eigenvalue bounds for Schur complement of some diagonally dominant matrices*

15:20 – 15:45 – Ksenija Doroslovački: *Further developments in estimation of the infinity norm of the inverse matrix*

### Session 3B – Linear algebra in statistics

14:30 – 14:55 – Andre Klein: *Statistical distance measures and the Fisher information matrix*

14:55 – 15:20 – Anuradha Roy: *Discriminant analysis for multi-level multivariate data*

15:20 – 15:45 – Katarzyna Filipiak: *Properties of design information matrix under an interference model*

**15:45 – 16.00 – Coffee Break**

**Session 4A** – Matrix computations and numerical linear algebra

16:00 – 16:25 – Augustyn Markiewicz: *Determinants of multi-diagonal matrices*

16:25 – 16:50 – Marko Stošić: *Projections on the intersection of convex sets*

16:50 – 17:15 – Ivana Pultarová: *Multilevel iterative aggregation-disaggregation methods for Markov chains*

**Session 4B** – Matrix Inequalities

16:00 – 16:25 – Ramazan Türkmen: *Inequalities involving the Kronecker products and the Hadamard products of matrices*

16:25 – 16:50 – Zübeyde Ulukök: *Matrix bounds for the solution for the discrete algebraic Riccati matrix equation*

**17:15 – 17.30 – Coffee Break**

**Session 5** – Poster Session

Aníbal Areia: *Modelling the Compromise matrix in STATIS method*

Şerife Büyükköse: *The bounds for spectral radius using product matrix of G graph*

Ana Cantarinha: *Single models of multivariate collective models*

Maria T. Gassó: *The Hadamard product with B matrices and M matrices*

Clara Grácio: *Spectral and dynamic invariants in a complete clustered network*

Sónia Inácio: *Non-centrality parameter in STATIS interstructure*

Izabela Kurzydło: *On a problem connected with matrices over  $Z_3$*

Zagorka Lozanov-Crvenković: *Multivariate statistical analysis characterization of newly synthesized hydantoins*

**18:30 – Barbecue**

## Wednesday, 13.07.2011

### Session 6

9:15 – 10:00 – Invited Speaker – Natália Bebiano: *Entropy and trace inequalities*

**10.00 – 10.15 – Coffee Break**

### Lecture II

10:15 – 11:45 – Volker Mehrmann: *Nonlinear eigenvalue problems: analysis and numerical solution*

**11.45 – 12.00 – Coffee Break**

### Session 7

12:00 – 12:30 – Miguel Fonseca & Roman Zmyślony: *Maximum likelihood with restrictions in  $R^n$*

12:30 – 13:00 – Simo Puntanen: *More about the BLUEs under two different linear models*

**13.00 – 14.30 – Lunch**

### Session 8A – Positive and nonnegative matrices

14:30 – 14:55 – Anabela Borges: *Complexity measures versus matrix measures*

14:55 – 15:20 – Alfonso Montes-Rodríguez: *Heisenberg uniqueness pairs and positive matrices*

15:20 – 15:45 – K. C. Sivakumar: *Nonnegative generalized inverses and least elements of polyhedral sets*

### Session 8B – Matrix computations and numerical linear algebra

14:30 – 14:55 – Ana Nata: *Numerical ranges of banded 2-Toeplitz operators: boundary generating curve and algorithms*

14:55 – 15:20 – Paulo Rodrigues: *Weighted singular value decomposition and application to the study of QTL by environment interactions*

15:20 – 15:45 – Nicolas Gillis: *Low-rank matrix approximation with weights or missing data is NP-hard*

**15:45 – 16.00 – Coffee Break**

### Session 9A – Matrix Inequalities

16:00 – 16:25 – Rute Lemos: *Hyponormality and Aluthge transformation of indefinite type*

16:25 – 16:50 – Graça Soares: *Some characterizations of the indefinite chaotic order*

### Session 9B – Matrix Polynomials

16:00 – 16:25 – Henrique F. da Cruz: *On pairs of matrices that satisfy certain polynomial identities*

16:25 – 16:50 – Aikaterini Aretaki: *Generalizations of numerical range of matrix polynomials*

**17:05 – Excursion**

# Thursday, 14.07.2011

## Session 10

9:15 – 10:00 – Invited Speaker – Charles R. Johnson: *Why are those exponents so critical?*

**10.00 – 10.15 – Coffee Break**

## Lecture III

10:15 – 11:45 – Ali S. Hadi: *Applications of matrix algebra in various fields*

**11.45 – 12.00 – Coffee Break**

## Session 11

12:00 – 12:30 – Ljiljana Cvetković: *Eigenvalue localization refinements*

12:30 – 13:00 – Tomasz Szulc: *Optimal Gersgorin-style estimation of the largest singular value*

**13.00 – 14.30 – Lunch**

## Session 12A - Miscellanea

14:30 – 14:55 – Victor Álvarez: *Binary and ternary extremal cocyclic self-dual codes*

14:55 – 15:20 – Wojciech Tadej: *Defect of a Kronecker product of Fourier matrices*

15:20 – 15:45 – Marija Dodig: *Explicit solution of the Carlson problem*

## Session 12B – Linear algebra in statistics

14:30 – 14:55 – Dulce Pereira: *Stochastic validation of the zig-zag algorithm in Joint Regression Analysis*

14:55 – 15:20 – Sandra Ferreira: *Segregation without matching*

15:20 – 15:45 – Dário Ferreira: *Estimating variance components in models with additivity*

**15:45 – 16.00 – Coffee Break**

## Session 13A – Stable matrices

16:00 – 16:25 – Ana Catarina Carapito: *Block diagonally stable matrices*

16:25 – 16:50 – Volha Kushel: *Theory and applications of generalized even and odd oscillatory matrices*

## Session 13B – Linear algebra in statistics

16:00 – 16:25 – Francisco Carvalho: *The equivalence of error orthogonal models and models with commutative orthogonal block structure*

16:25 – 16:50 – Manoochehr Babanezhad: *Covariance matrix estimator of the causal effect estimator in a semi-parametric model*

**17:05 – Excursion**



# Friday, 15.07.2011

## Session 14

9:15 – 10:00 – Invited Speaker – Jeff Hunter: *The role of Kemeny's constant in properties of Markov chains*

**10.00 – 10.15 – Coffee Break**

## Lecture IV

10:15 – 11:45 – Ali S. Hadi: *Applications of matrix algebra in various fields*

**11.45 – 12.00 – Coffee Break**

## Session 15

12:00 – 12:30 – Jaspal Singh Aujla: *Some inequalities for unitarily invariant norms*

12:30 – 13:00 – Susana Furtado: *On the eigenvalues of principal submatrices of J-normal matrices: the J-diagonalizable case and the general 3x3 case*

**13.00 – 14.30 – Lunch**

## Session 16A – Matrices and Graphs

14:30 – 14:55 – A. Dilek Maden: *On the resistance-distance spectral radius and the resistance-distance energy of graphs*

14:55 – 15:20 – Clara Grácio: *Systoles and Markov chains in graphs*

15:20 – 15:45 – Olivia Walch: *Commuting pairs and symmetric realizations*

## Session 16B - Miscellanea

14:30 – 14:55 – Carla Fidalgo: *Positive semidefinite polynomials and sums of squares*

14:55 – 15:20 – Esra Erkuş-Duman & Oktay Duman: *Approximation by matrix-valued linear positive operators*

15:20 – 15:45 – Rupinderjit Kaur & Mandeep Singh Rawla: *Complete interpolation of matrix versions of Heron and Heinz means*

**15.45 – 16.00 – Coffee Break**

## Session 17A – Stable matrices

16:00 – 16:25 – Özlem Esen: *On the common quadratic Lyapunov functions for D- stable matrices*

16:25 – 16:50 – Trevor Bruen: *Connections of block designs with certain  $(\alpha, \beta)$  stable matrices*

## Session 17B – Linear algebra in statistics

16:00 – 16:25 – Célia Fernandes: *Crossing balanced and stair nested designs*

16:25 – 16:50 – Paulo Ramos: *Sub-models*

**16:50 – 17.05 – Coffee Break**

**Session 18A** – Matrices and Graphs

17:05 – 17:30 – Paula Carvalho: *Strongly regular graphs and domination constraints: an algebraic approach*

17:30 – 17:55 – Ş. Burcu Bozkurt: *Improved bounds for Estrada index of graphs*

**Session 18B** – Matrix computations and numerical linear algebra

17:05 – 17:30 – João Cardoso: *Evaluating the Fréchet derivative of the matrix  $p^{\text{th}}$  root*

17:30 – 17:55 – João Patrício: *Numerical computation and applications of nonnegative matrix factorizations*

**20:00 – Conference Dinner**

**Saturday, 16.07.2011**

**Session 19**

9:15 – 10:00 – Invited Speaker – Aneta Sawikowska: *Singular value maximization in  $(0,1)$ -matrices*

**10.00 – 10.15 – Coffee Break**

**Lecture V**

10:15 – 11:45 – Narayanaswamy Balakrishnan: *Permanents and applications*

**11.45 – 12.05 – Coffee Break**

**Session 20**

12:05 – 12:50 – Invited Speaker – Ricardo Covas:

**12.50 – 14.30 – Lunch**

**Session 21 - Miscellanea**

14:30 – 14:55 – Murat Alper Basaran: *Finding the inverse of the fuzzy matrix using fuzzy linear equation system*

14:55 – 15:20 – R. K. Sinha: *Transition matrix for Indian non-life insurers*

**15:20 – Closing**